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ABSTRACT

Cognitive and achievement levels were analyzed for 192 students (grades 1-12) served in generic special education resource rooms in a Texas community, using cognitive and achievement test data, service delivery information, and demographic data. Grade levels of the subjects were used as a constant in the data analysis. Among reported findings were that educable mentally retarded students were distinguished from other groups by low intelligence quotient (IQ) scores and overall academic achievement. The learning disabled group represented 74 percent of the total population, scored highest on all three IQ scores measured by the Wechsler scales, and were similar to the emotionally disturbed group on both cognitive and achievement measures. The emotionally disturbed group had slightly higher reading scores than the learning disabled group. Learning disabled, mildly emotionally disturbed, and orthopedically handicapped groups performed similarly on cognitive and achievement measures. Nine data tables are included. (JW)

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CHARACTERISTICS OF MILDLY HANDICAPPED STUDENTS SERVED IN RESOURCE ROOMS

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CHARACTERISTICS OF MILDLY HANDICAPPED STUDENTS SERVED IN RESOURCE ROOMS

The decade of the 1970's and 80's have brought an increased number of states implementing a generic or cross-catagorical approach for providing educational programs for mildly handicapped students (mildly emotionally disturbed or learning disabled or mildly mentally retarded) in special education resource rooms. The educational characteristics that define the handicapping conditions have been debated for a number of years. During the 1970's researchers began to advocate grouping mildly handicapped students together for instruction (Hallahan & Kauffman,1978; Reynolds & Birch, 1979; and Marsh, Price & Smith 1983).

There is a paucity of research describing the cognitive and achievement levels of students served in special education resource rooms. A number of studies have attempted to compare learning disabled with emotionally disturbed and/or educable mentally retarded on selected cognitive and educational variables (Gajar, 1979, 1980; Epstein & Cullinan,1983; and Wilson, Cone, Bradley, & Reese, 1986). Singer, Butler, Palfrey & Walker (1986) conducted a national survey of special education placements through an analysis of individual educational programs (IEP's). Their sample was drawn from five metropolitan school districts. Singer, et, al., concluded that public education is meeting the intent of PL 94-142. None of the above studies included a sample of subjects from secondary schools.

The purposes of this investigation were to provide a discription of mildly handicapped students served in resource rooms at both the elementary and secondary levels and to provide a discription of the student's academic program through an analysis of IEP requirements.

METHOD

Subjects

The subjects included 192 students (67 females and 125 males) randomly selected from the total number of handicapped students served in generic special education resource rooms in a community located in the panhandle of Texas. The subjects were selected to represent 50 students from the primary grades (grades 1-3), 50 students from the intermediate grades (grades 4-6), 50 students from the junior high (grades 7-9), and 50 students from the high school (grades 10-12). No attempt was made to select subjects by handicapping condition as all subjects were considered mildly handicapped and served in special education resource rooms. Eight subjects were eliminated from the sample because of incomplete cognitive or achievement test data.

Procedure

Cognitive and achievement test data, service delivery information, and demographic data were recorded for each subject from data available in each student's individual educational program. The cognitive measures included the Verbal, Performance, and Full Scale IQ scores from Wechsler scales.

Academic achievement test scores were taken from the Woodcock-Johnson Achievement Test (Reading Cluster, Math Cluster, Written Language, Knowledge, Skills and Oral Language) subtests and from the Wide Range Achievement Test (Spelling, Math and Reading) subtests. Information from the individual educational program included the types of services received (reading, language arts, mathematics, English, history, vocational programs, science and support services) and the number of hours per week the student was assigned to each.

RESULTS

Grade levels of the subjects were used as a constant in the analysis of the data. The subject's cogntive and acheivement levels, types of educational services provided, and the amount of time in special education services are reported by grade level.

Table 1 presents the age and sex distribution for each grade. There were 125 males (65 percent) and 67 females (35 percent). The age of the subjects indicated that resource

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Insert Table 1 about here

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room students to be older than their peers at the elementary level. This trend may reflect the commitment to have students remain in regular education classes for an extended time period before referring them for special education evaluation. At the secondary level the mean age of this population is also higher.

Students classified as learning disabled is the most predominant handicapping condition representing 74 percent of the total population. See Table 2. The second largest handicapping condition was learning disabled-speech impaired

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Insert Table 2 about here

(n=15, 8%). Emotionally disturbed students comprised six percent (n=11) of the sample. Emotionally disturbed-learning disabled represented five percent (n=10) of the total sample. The remaining eight percent (n=15) represents a wide range of handicapping conditions, including the mildly mentally retarded. As may be seen in Table 2, approximately 18 percent of this sample included students with more than one handicapping condition.

There is a presistent concern that ethnic or minory groups are overrepresented in special populations. Texas requires that each student referred for special education evaluation be tested

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Insert Table 3 about here

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for language proficiency as part of the evaluation process. Table 3 presents the ethnic distribution by handicapping condition and grade level for this population. All ethnic students for this sample were Hispanic. The major handicapping condition for this

group was learning disabilities. Further, either learning disabilities and/or emotional disturbance was diagnostically present in all students.

Table 4 presents the means and standard deviations of the Verbal, Performance, and Full Scale IQs for each grade level.

Insert Table 4 about here

All Verbal IQ scores by grade level were within the average range except for grades ten (Mean 83.37) and eleven (Mean 77.54). The range of mean Performance IQs was 93.08 to 105.62 and the mean Full Scale scores was from 83.31 to 98.94. Table 5 presents a breakdown of IQ scores by handicapping condition. The learning disabled group had highest IQ scores

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Insert Table 5 about here

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for the Verbal, Performance, and Full Scale. The emotionally disturbed group had the next highest set of scores followed by the orthopedically handicapped group, speech handicapped, and last by the mentally retarded group. Several interesting findings may be seen. The learning disabled and emotionally disturbed group scores were both within the average range while the remaining three groups were below one standard deviation.

The differences in cognitive ability between the learning disabled and emotionally disturbed groups were not significantly different. The mentally retarded group had the lowest scores and was statistically different from the learning disabled and emotionally disturbed groups. This finding is similar to that of Gajar, (1979) and Wilson, Cone, Bradley & Reese (1986).

Academic achievement was measured by the Woodcock-Johnson Achievement Test and the Wide Range Achievement Test. A standard score with a mean of 100 and a standard deviation of 15 was used for comparisions. Table 6 presents the mean standard scores and standard deviations for academic achievement by grade level.

Insert Table 6 about here

All subjects in this population were below grade level expectations for all areas assessed. One finding that may be of significance to diagnoticians is the difference in mean standard scores from the Woodcock-Johnson Achievement Test and the Wide Range Achievement Test. These two commonly used achievement tests use a different response format and appear to be measuring different skills in test taking. Compare the reading cluster score of the Woodcock-Johnson with the reading subtest of the Wide Range Achievement Test for the emotionally disturbed group (Mean of 85.86 verses 76.00). Also note the Woodcock-Johnson produces higher scores except for grade six.

Comparisions of academic achievement for the five

handicapping conditions found in this study are presented in Table 7. The learning disabled group scored higher than the

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Insert Table 7 about here

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emotionally disturbed group on the Woodcock-Johnson subtests in all areas except the reading cluster. However, on the Wide Range Achievement Test the learning disabled group was higher on only the spelling subtest. The mentally retarded group was significantly lower on the math cluster from the other groups. The orthopedically handicapped group scored significantly lower on the knowledge subtest.

The educational program offerings for special education are similar to that of the regular education program. A brief discription of the program offerings are listed below.

Reading: Reading is offered from kindergarden through ninth grade. The reading program emphasizes both developmental and remedial procedures.

Language Arts: Language arts includes spelling, writing, and English instruction. Students are assigned to language arts based upon their individual educational program.

English: English is offered from grades six through twelve.

Instruction emphasizes the mechanics of English and the study of literature. The content includes the modification of the regular curriculum and texts.

Math: Math is offered from kindergarten through the twelfth grade. This is a modified program for students who are two to four years below grade level. Materials include basic texts, special programs, and teacher devised materials. Skill levels and objectives are determined using the Brigance Tests.

Science: Science is offered from kindergarten through the twelfth grade. This is a modified program and uses regular tests and teacher devised materials.

History: Social Studies is offered at the sixth through ninth grade. This is a modified program that emphasizes the essential elements at a lowered reading level.

Vocational: This vocational option if offered from grades seven through twelve. This program is offered through the vocational department and is open to those students who have the skills and abilities necessary to perform. This is a regular education program and students are assigned to the program through the IEP process.

VEH: Vocational education for the handicapped is designed for the more severely involved student. This program includes a two hour

block of practice and training. A "job coach" is used for on-the-job training.

VAC: Vocational academic curriculum if offered at the high school as a work training program. Students are enrolled in coursework and placed in employment for part of each school day. Students are supervised by the VAC teacher while in work situations.

Support Services: Support services are available t the junior and senior high school levels. This is a resource study hall. Students are placed in this program when they require some supportive assistance to succeed in regular programs.

The educational program offerings are presented in Table 8.

Insert Table 8 about here

In the first five grades the emphasis is on the basic skills of reading, math , and language arts. Beginning with grade six and above the emphasis becomes that of learning content as reflected in the regular school curriculum. Beginning at grade eight students have available career/vocational options. The data suggests that approximately one half of the students select a vocational option at the senior high level. The support progam for students in mainstreamed classes suggest success in mainstreaming handicapped students into regular classes.

As may be seen in Table 9, the number of minutes per week

Insert Table 9 about here

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in a particular program option suggests a minimum of 300 minutes per week or one hour per day is the norm. At the secondary level the vocational programs provide options of 300 to 600 minutes per week in preparing for a career area upon completion of the formal school experience.

DISCUSSION

The data analysis, across categories, of students labeled as mildy handicapped and served in resource rooms revealed several significant findings. Educable mentally retarded students were distinguished from other groups by low IQ scores and overall academic achievement. The learning disabled group represented 74 percent of the total population and scored highest on all three IQ scores measured by the Wechsler scales and were similar to the emotionally disturbed group on both cognitive and achievment measures. The emotionally disturbed group compared similarly to the learning disabled group and higher than the remaining three groups. This study confirmed Gajar's (1979) finding that the emotionally disturbed groups had slightly higher reading scores than the learning disabled group.

Special education resource rooms for mildly handicapped students have a significant number of students with more than

one handicapping condition. Speech related problems is the most prevalent second handicapping condition. However the number of students with both emotional disturbance and learning disabilities suggest a need to further investigate this finding.

The distribution of students from minorities for this population is skewed and does not represent the norm. However, the finding that these minority students are performing academically at approximately the same level as their peers in resource rooms suggest that diagnositic procedures used to identify this group is not biased because of cultural background.

These findings have implications for the concept of generic resource rooms for special education. This study found that learning disabled, mildly emotionally disturbed, and orthopedically handicapped groups performed similarly on the cognitive and achievement measures. This data suggests that grouping these students together for instruction is sound practice, based on their achievement. However, the educable mentally retarded performed lower on the variables measured. The low performance of this group presents a major problem for the resource room teacher who must meet the needs of all students in the classroom.

An implication for further study would be to do a time analysis of instructional time within resource rooms to determine the time required to meet the instructional needs of mildly handicapped students.

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Table 1

Mean Age of Males and Females By Grade Level

Grade Level	N	%	N	%	Mean CA Months	Mean CA Years
1	11	69	5	31	94.69	7-9
2	9	56	7	44	101.38	8-5
3	15	88	2	12	114.35	9-5
4	7	44	9	56	133.75	11-2
5	9	53	8	47	138.94	11-6
6	9	56	7	44	150.19	12-5
7	11	69	5	31	162.94	13-6
8	11	65	6	35	172.76	14-4
9	15	88	2	12	187.76	15-7
10	16	73	6	27	196.14	16-3
11	9	56	7	44	214.13	17-8
12	3	50	3	50	220.0	18-3
	125	65%	67	35%		

Table 2

Number of Students by Handicapping Condition by Grade Level

	Handicapping Condition											
Grade Level	LD	LD/SH	LD/VH	MR	MR/SH	OHI	OH/ED	OH/LD	ED	ED/LD	HI/SH	SH
1	8	6						1		1		
2	10	3				2			2			
3	12	2				1		1	1			
4	13		1		1				1			
5	14	2								1		
6	13								2	1		
7	12	1			1					2		
8	11					1			2	2	1	
9	14								2	1		
10	16	1					1	1	1	2		
11	13			2								1
12	6											
n	142	15	1	2	2	4	1	3	11	10	1	1

Table 3

Hispanic Distribution and Handicapping Condition by Grade Level

Grade Level	LD/SH	LD	ED	ED/LD
1	1			
2		2	1	
3				
4		2	1	
5		1		
6		3		
7				
8			1	1
9		3		
10		2		1
11		1		
12	-	-	-	-

Table 4

WISC-R Means and Standard Deviations by Grade Level

Grade Level	N	Verbal IQ Mean	Verbal IQ SD	Performance IQ Mean	Performance IQ SD	Full Scale IQ Mean	Full Scale IQ SD
1	13	99.15	10.35	105.62	9.22	98.46	19.01
2	17	91.35	15.74	101.76	17.40	98.94	10.41
3	14	99.57	11.59	97.00	14.34	98.21	12.64
4	17	90.76	19.15	100.24	15.02	98.00	11.85
5	16	92.69	13.31	103.13	7.44	96.69	9.10
6	16	88.56	12.01	93.75	17.26	90.19	14.24
7	15	90.27	13.23	99.27	12.86	93.73	13.33
8	15	86.73	10.50	101.53	13.40	93.07	12.58
9	16	85.69	8.45	100.81	13.08	91.88	10.29
10	19	83.37	14.21	99.84	12.78	89.79	13.31
11	13	77.54	8.04	93.08	17.76	83.31	9.73
12	6	88.17	8.18	95.83	14.26	90.67	11.06

Table 5

WISC-R Means and Standard Deviations by First Handicapping Condition

		WISC-R					
Handicapping Condition	n	Verbal IQ Mean	SD	Performance IQ Mean	SD	Full Scale IQ Mean	IQ
ED	13	89.54	15.34	99.92	13.60	93.31	14.39
LD	154	90.07	13.52	100.71	13.32	94.77	12.22
O.H.	6	84.67	15.49	83.17	16.75	83.50	16.32
S.H.	1	77.00	-	85.00	-	79.00	-
MR	3	68.67	.58	72.33	12.74*	70.33	7.09*

$p < .05$

Table 6

Standard Score Means for Achievement by Grade Level

	Woodcock-Johnson Ach. Test							WRAT	
Grade Level	Reading Cluster	Math Cluster	Written Lang.	Knowledge	Skills	Oral Lang	Spell	Read	Math
1	74.3	82	83.25	68	73.67	90	66.64	67.21	68
2	79.7	79.65	79.71	65	87.25	89.57	73.77	77.23	84.23
3	75.93	81.73	81	98.67	89.57	88.88	79.47	74.4	78.83
4	82.13	81.38	82.94	83.5	70	82.44	78.3	74.1	83.67
5	76.44	80	80.94	-	-	91	77.14	81.67	81.5
6	84.93	81.31	84.1	83	70	77.5	87.29	91.5	73.67
7	80.56	85.5	78.6	-	-	52	75.56	73.3	79
8	83.71	80.88	83.25	74	-	-	79.17	81.8	76.6
9	86.41	81.71	82.94	-	-	71	69.33	73	70
10	81	80.8	86.5	-	-	-	68	-	75
11	81.64	77.79	80.14	-	-	-	66.33	76.5	71
12	85.67	85.3	86	95	-	83	75	65	74.5

Table 7

Standard Score Means and Standard Deviations for Academic Achievement by Handicapping Condition

Academic Achievement	Handicapping Condition									
	ED		LD		OH		SH		MR	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Woodcock-Johnson										
Reading Cluster	85.86	12.32	81.71	10.36	83.14	12.63	82.00	-	74.75	7.76
Math Cluster	80.07	9.29	81.95	11.07	74.14	11.55	79.00	-	66.00	2.00*
Written Language	81.46	11.99	88.27	9.43	80.43	12.15	81.00	-	72.70	7.41
Knowledge	65.00	-	88.00	10.34	50.00	-*	-	-	-	-
Skills	70.00	-	74.20	7.29	87.50	26.16	-	-	-	-
Oral Language	-	-	86.31	12.08	84.50	43.13	-	-	59.00	-
WRAT										
Spelling	70.67	8.55	75.88	12.58	77.80	2.95	-	-	71.00	5.66
Reading	76.00	14.35	75.50	10.49	76.80	9.15	81.00	-	59.50	3.54
Math	84.67	10.42	77.77	11.87	76.00	7.67	89.00	-	69.00	8.49

$p < .05$

Table 8

Number of Students Served by Educational Service Option

Grade Level	Services Read	LA	Math	Eng.	Hist.	VOC	VEH	VAC	Sci.	Support
1	16	16	13							
2	17	16	12							
3	16	17	14							
4	14	17	10							
5	15	15	11							
6	14	7	11	8	2				2	
7	9		12	12	8				9	1
8	2	1	13	13	10		3		11	1
9			13	10	10	8	2			5
10			15	14		7		2		5
11			13	10		7		7		5
12			1	1		3			1	4

Table 9

Mean Number of Minutes Per Week for Services by Grade Level

Grade Level	Services Read	LA	Math	Eng.	Hist.	VOC	VEH	VAC	Sci.	Support
1	300	258	300							
2	300	307	300							
3	300	270	300							
4	300	318	300							
5	300	228	300							
6	300	300	300	300	300				300	
7	300		300	300	300				300	300
8	300	300	300	300	300		300		300	300
9			300	300	300	300	300		300	300
10			300	300		600		300		300
11			300	300	300	300		600		300
12			300	300		300		600		300